

## CLAIMS

### WHAT IS CLAIMED IS:

1. A client-server computer system comprising:
  - a client application server;
  - an application server accessible by a plurality of client application servers via a plurality of application software protocols, wherein said application server provides a data validation service on data in response to a validation request from a client application server; and,
  - a storage mass coupled to said application server for storing a system of dynamically maintainable validation functions for performing said validation service.
2. A client-server computer system according to claim 1, wherein said storage mass comprises an Oracle database.
3. A client-server computer system according to claim 1, wherein said validation functions are represented by a storage schema in the form of Lightweight Directory Access Protocol.
4. A client-server computer system according to claim 2, wherein said Oracle database contains a table-based system of rules organized into at least three hierarchically-organized views.
5. A client-server computer system according to claim 3, wherein the storage schema

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represented by Lightweight Directory Access Protocol represents a table-based system of rules organized into at least three hierarchically-organized views.

6. A client-server computer system according to claim 2, wherein said Oracle database stores validation functions stored as hierarchically-organized views that are dynamically updateable by an external administrator.

7. A client-server computer system according to claim 3, wherein said storage schema represented by Lightweight Directory Access Protocol represents validation functions stored as hierarchically-organized views that are dynamically updateable by an external administrator.

8. A client-server computer system according to claim 4, wherein said application server and said Oracle database are centrally located to said plurality of client application servers and said validation functions are maintainable by a remote administrator.

9. A client-server computer system according to claim 5, wherein said application server and said storage schema represented by Lightweight Directory Access Protocol are centrally located to said plurality of client application servers and said validation functions are maintainable by a remote administrator.

10. An application server comprising:  
a plurality of client application servers;



16. An application server according to claim 12, wherein said storage schema represented by Lightweight Directory Access Protocol represents validation functions stored as hierarchically-organized views that are dynamically updateable by an external administrator.

17. An application server according to claim 13, wherein said means for performing validation services and said Oracle database are remotely located to said plurality of client application servers and wherein said validation rules are maintainable by a remote administrator.

18. An application server according to claim 14, wherein said application server and storage schema in the form of Lightweight Directory Access Protocol are remotely located to said plurality of client application servers and further comprises means for maintaining said validation functions.

19. A system for providing an application service, the system comprising:

an application server;

a plurality of applications coupled to the application server;

one or more application programming interfaces, the one or more application programming interfaces for coupling said plurality of applications to said application server and for coupling data validation requests and data via a plurality of computer network protocols; and

at least one dynamically-maintainable data schema coupled to said application

server.

20. A system according to claim 19, wherein said data schema is at least partially in the form of an Oracle database.

21. A system according to claim 19, wherein said data schema comprises validation functions in the form of Lightweight Directory Access Protocol.

22. A system according to claim 20, wherein said data schema contains a table-based system of rules organized into a plurality of hierarchically-organized views.

23. A system according to claim 21, wherein said data schema in the form of Lightweight Directory Access Protocol represents a table-based system of rules organized into a plurality of hierarchically-organized views.

24. A system according to claim 20, wherein said data schema stores validation functions stored as hierarchically-organized views.

25. A system according to claim 21, wherein said data schema in the form of Lightweight Directory Access Protocol represents validation functions stored as hierarchically-organized views that are dynamically updateable.

26. A system according to claim 22, wherein said application server and said data

schema are remotely located to a plurality of client application servers and said validation rules are maintainable by a remote administrator.

27. A system according to claim 23, wherein said application server and said schema in the form of Lightweight Directory Access Protocol are remotely located to a plurality of client application servers and said validation rules are maintainable by a remote administrator.

28. The system of claim 26, wherein said system couples data between the application and said application server in the form of a string.

29. The system of claim 27, wherein said application server treats data passed to it as a string.

30. The system of claim 28, wherein the said application server receives data from said application in the form of a hashtable.

31. A system for providing data validation service on requests from applications running a plurality of software protocols, the system comprising:

a data network;

an application server, the application server in communication with the data network;

at least one application, the application in communication with the application server, the application providing validation requests to the application server via the data network;

one or more open application programming interfaces, the one or more application programming interfaces capable of handling a plurality of software protocols and in communication with the application server and said applications; and

a data schema in communication with said data network, for storing validation functions, and accessible by said application server, wherein said application server processes the validation requests and returns a response to the applications according to said validation functions stored in said data schema.

32. A system according to claim 31, wherein said data schema comprises an Oracle database.

33. A system according to claim 31, wherein said validation functions are stored in the format of Lightweight Directory Access Protocol.

34. A system according to claim 32, wherein said Oracle database contains a table-based system of rules organized into hierarchically-organized views.

35. A system according to claim 33, wherein said schema in the form of Lightweight Directory Access Protocol represents a table-based system of rules organized into hierarchically-organized views.

36. A system for providing an application service, the system comprising:
- means for receiving a service request from a customer, wherein the customer requests a validation service and couples data to said system in the form of hashtables;
  - means for sending a validation request instruction to an application server corresponding to data to be validated;
  - means for sending a service request from the application server to a database, the service request based at least in part on the validation request;
  - means for performing hierarchically-based validation services on the data;
  - means for remotely updating said database based on current validation requirements of said system;
  - means for sending a validation result from the application server to said customer based at least in part on the validation request; and
  - means for providing a response to said system from said customer to said system in response to said validation result.
37. A computer-readable medium storing a plurality of instructions adapted to be executed by a processor for providing an application service, the plurality of instructions comprising instructions to:
- receive a service request from a customer data device, the customer data device including data to be validated;
  - generate a service session instruction, the service session instruction based at least in part on the service request;



send the service session instruction to one or more open application programming interfaces, the service session instruction corresponding to one or more data validation requests from said customer data device;

perform one or more validation functions based on stored rules in a database; and,  
send a validation service response to the customer data device, the validation service response based on the service request.

38. A medium according to claim 37, wherein said database comprises an Oracle database and further comprises an instruction to load said database into a memory upon startup of said application service.

39. A medium according to claim 37, wherein said validation functions are stored in the format of Lightweight Directory Access Protocol and further comprise an instruction to load said database into a memory upon startup of said application service.

40. A method of providing validation data service with a client-server computer system comprising the steps of:

coupling a data validation request between a client application server and an application server;

providing data validation service request instructions to a data schema in response to said validation request coupled between said client application server and said application server;

retrieving a plurality of hierarchical dynamically maintained validation rules from a

centralized storage mass coupled to said application server;

updating said validation rules;

manipulating data in accordance with said validation rules; and

coupling a response to said client application server.

41. A method for providing an application service, the method comprising:

a step for sending a data validation service request from a user;

a step for generating a validation service instruction, the service instruction based at least in part on a validation service request from said user;

a step for sending the service instruction to one or more data storage schemas via one or more application programming interfaces, the service instruction corresponding to one or more validation requests from the user;

a step for dynamically updating a table of validation rules stored in said one or more data schemas based on changes to the application service;

a step for calling up at least one table of validation rules from said one or more data storage;

a step for performing validation functions on data in accordance with updated validation rules stored in said table and the validation request from said user; and,

a step for sending service response to the user requesting validation service.